Next generation green power products for corporate customers

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9th National Green Power Marketing Conference
Albany, NY
October 4, 2004

GREEN POWER MARKET DEVELOPMENT GROUP

The Green Power Market Development Group

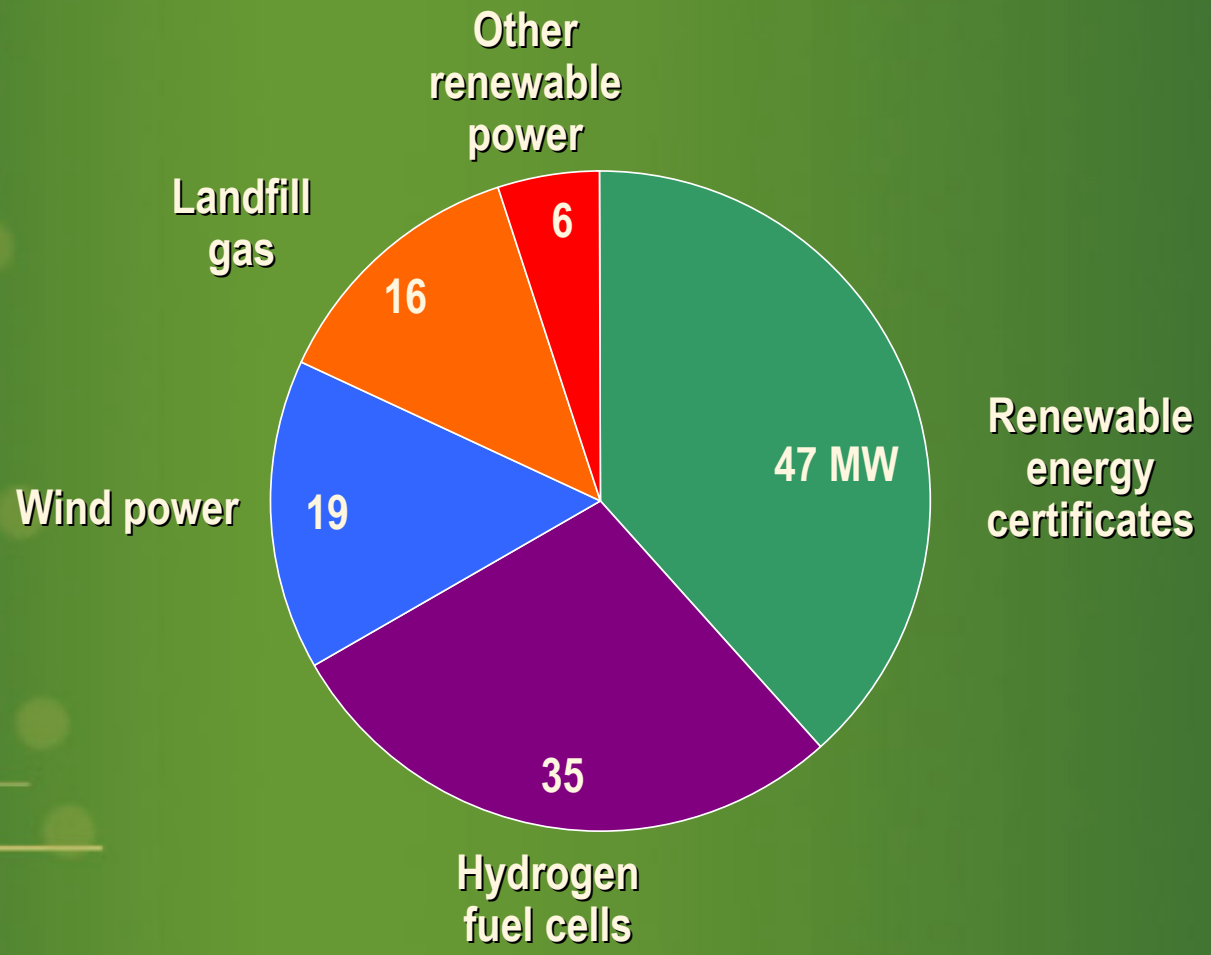
Developing corporate markets for 1,000 MW of new, cost-competitive green power by 2010 in the US

- Alcoa Inc.
- Cargill Dow LLC
- Delphi Corporation
- The Dow Chemical Company
- DuPont
- FedEx Kinko's
- General Motors
- IBM
- Interface
- Johnson & Johnson
- Pitney Bowes
- Staples

The Green Power Market Development Group has completed 123 MW of green power projects and purchases

Total = 123 megawatts (MW)

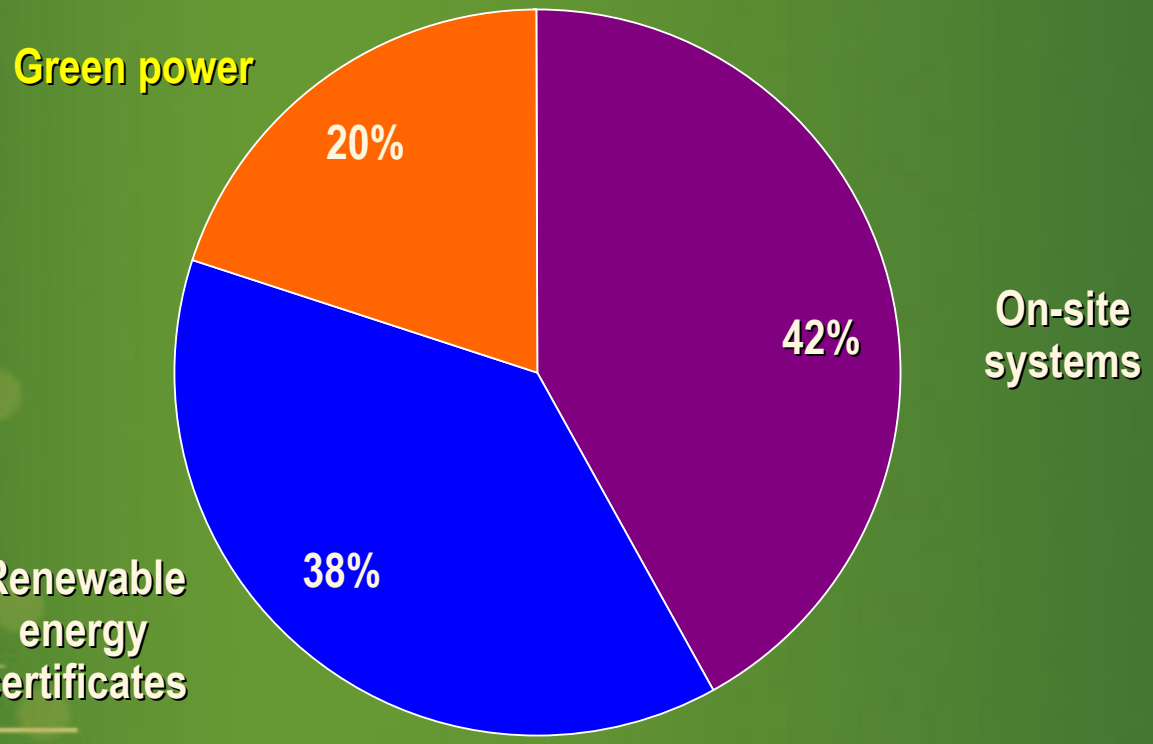
As of December 2003



The majority of these purchases are on-site systems and RECs

Percent, 100% = 123 MW

As of December 2003



Many current generation green power products are not sufficiently attractive to corporate customers

1. High premiums

- Regulated markets: $26 / MWh avg.
- Deregulated markets: $21 / MWh avg.

2. Limited value proposition

- PR
- Environmental goals
- ???

Value proposition often does not justify the premium

Less expensive means of PR & meeting environmental goals

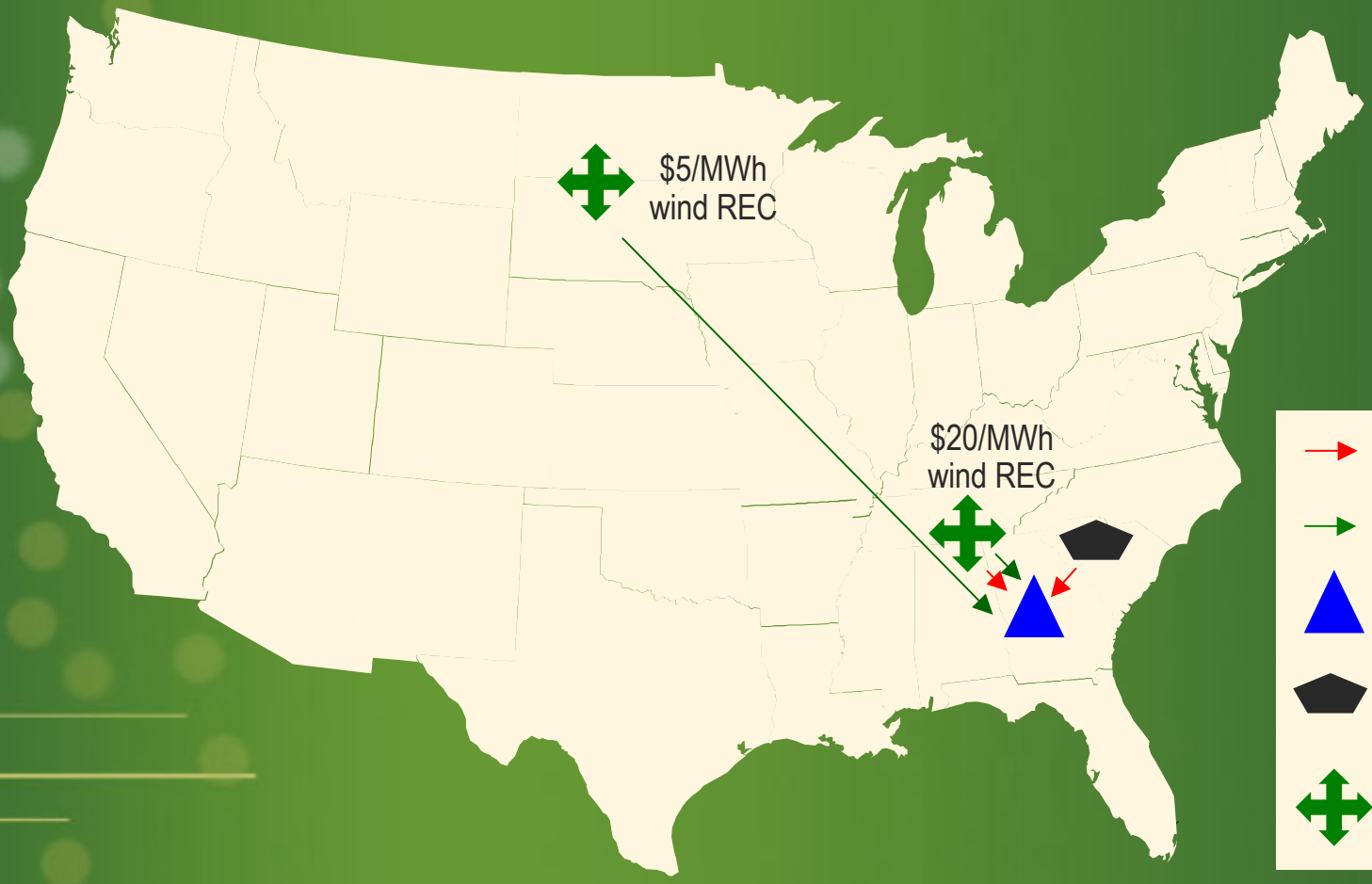
"Next generation" green power product designs can address these shortcomings

Green power using nationally sourced RECs	→	Reduces price premiums
Long-term fixed-price green power	→	Provides additional value proposition: Hedge
Green contract for differences	→	Provides additional value proposition: Hedge

What is green power using nationally sourced RECs?

Green power = Commodity electricity + REC

ILLUSTRATIVE



Case example: Pepco Energy Services, Sterling Planet, and The Tower Companies

March 2003

Off-the-shelf green power

Local LFG REC
+
Local electricity

High premium

New green power product

National biomass REC
+
Local electricity

Lower premium

More options

Emergence of green power using nationally sourced RECs could have several market implications

For corporate customers →

- Lower cost green power
- Greater variety of options

For retail electricity suppliers →

- Diversified portfolio ("national" and "local" green power)
- Ability to compete against unbundled RECs

Green power using nationally sourced RECs could help retail electricity suppliers provide alternatives to unbundled RECs

Possible advantages to customer

- One contract negotiation (at least for a facility)
- All on same bill
- Easier to describe
- Possible lower premium if retail electricity supplier gets volume discount on wholesale RECs

The green power premium could be lower than the REC price from the same source if electricity supplier buys at scale

ILLUSTRATIVE

Scenario 1

REC marketer

10,000 wind RECs at $7/MWh

Customer A

Scenario 2

REC marketer

100,000 wind RECs at $5/MWh

Retail electricity supplier

10,000 wind RECs at $6/MWh

Customer A

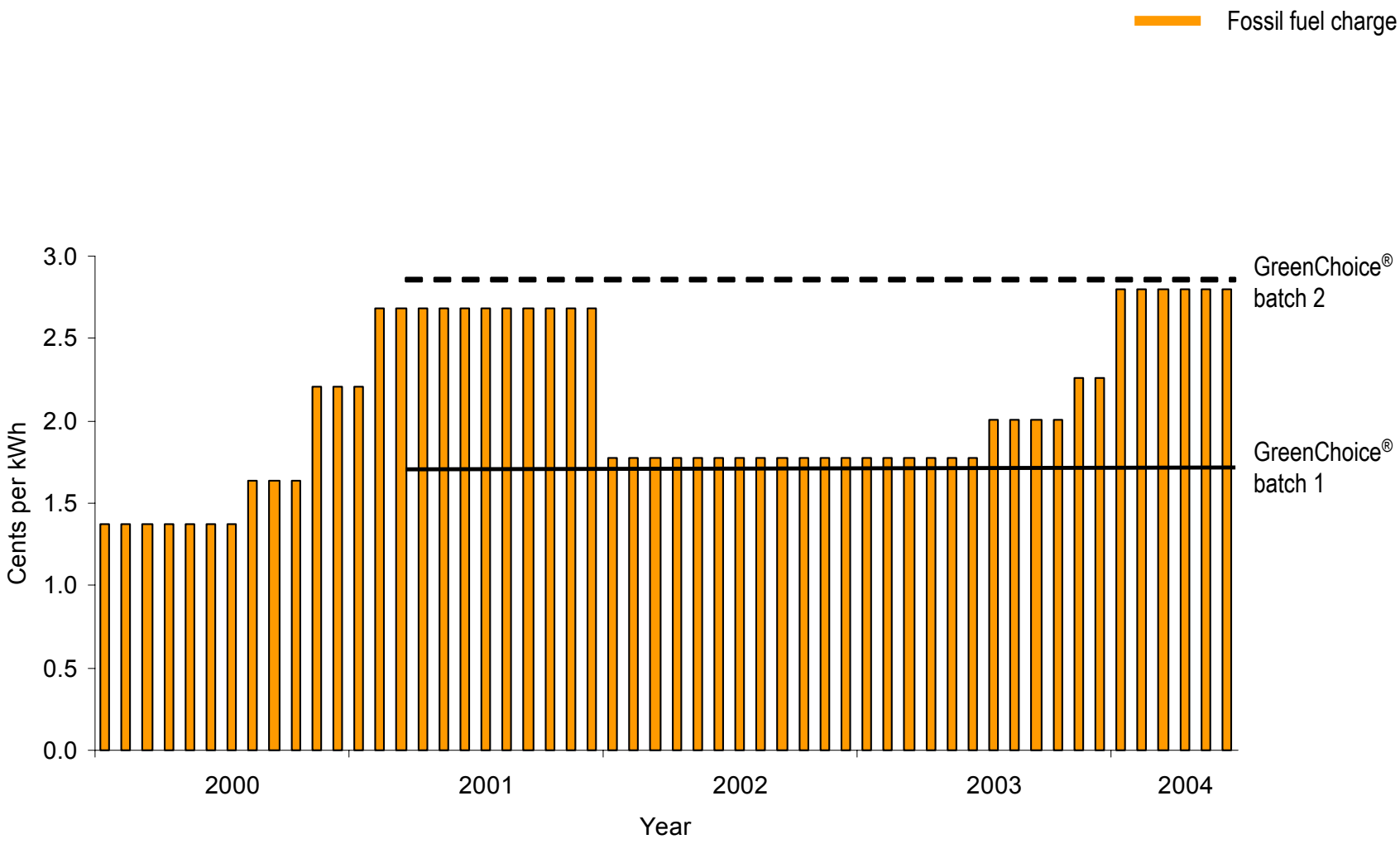
Customer B

Customer …

What is long-term fixed-price green power?

Long-term	• 3+ years; often difficult for corporate customers to do >10 years
Fixed price	• Flat rate
Value proposition	• PR, environmental goals . . . • . . . plus hedge against electricity rate fluctuations
Status	• Not common

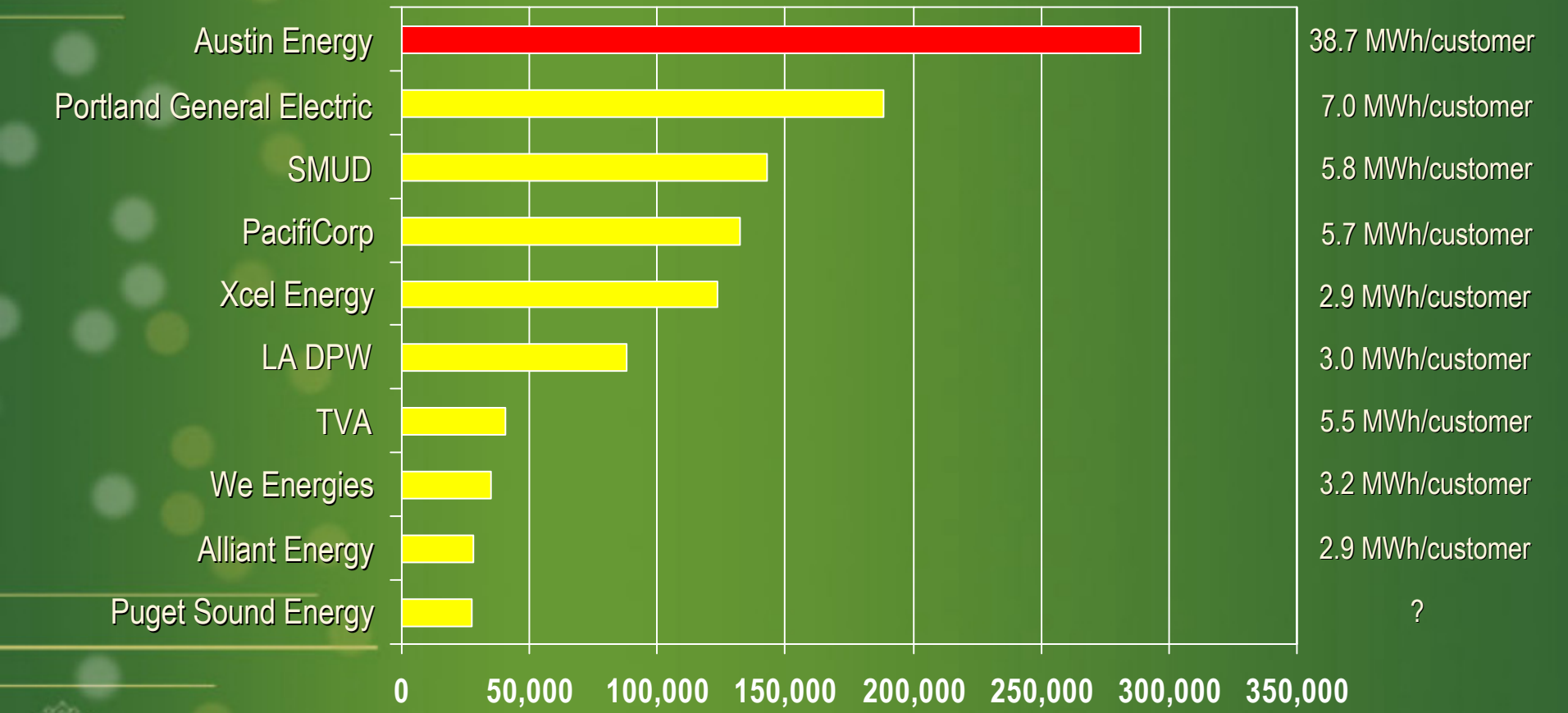
Case example: Austin Energy's fossil fuel charge vs. GreenChoice® charge



Source: Austin Energy, 2004

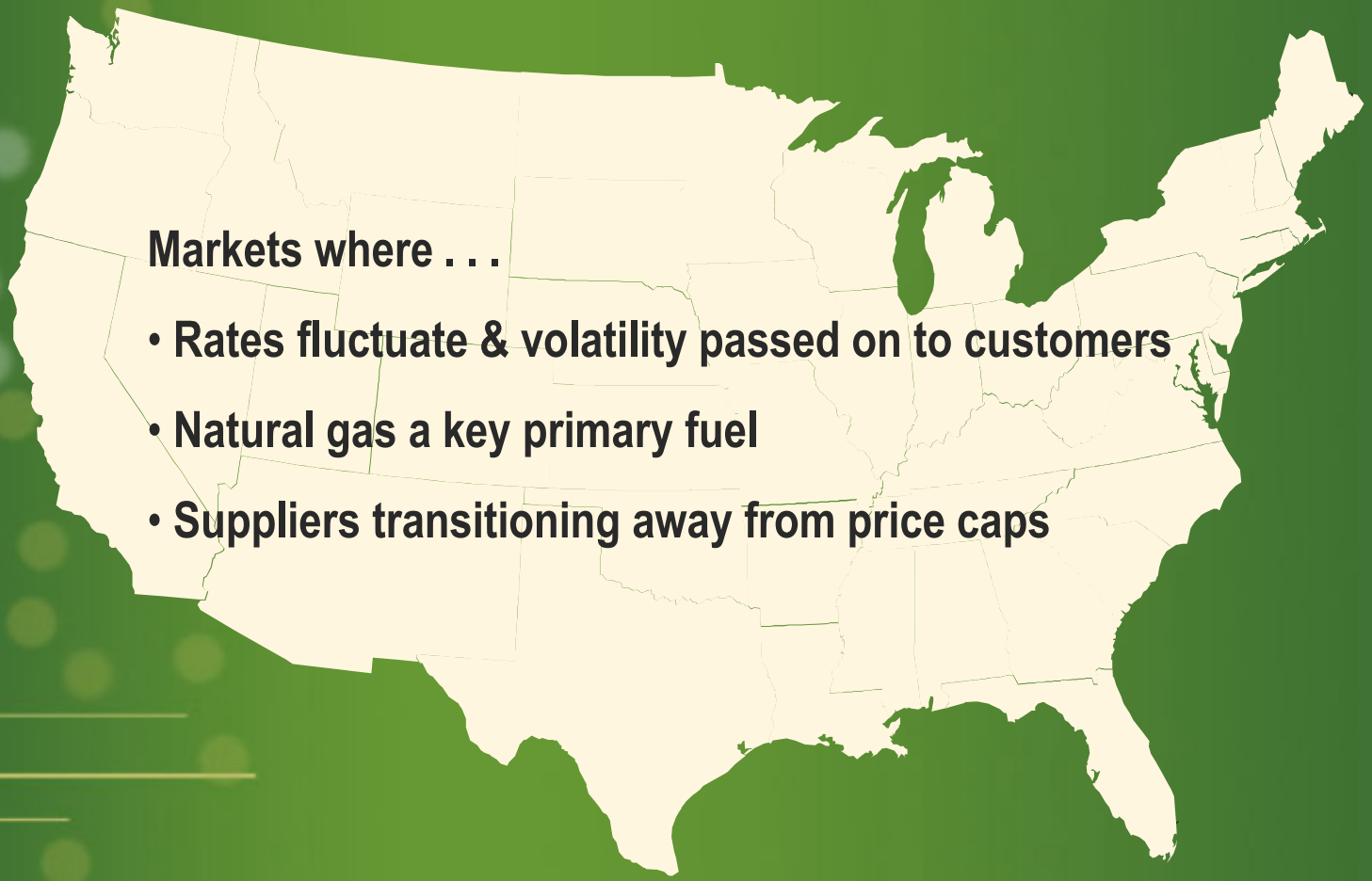
Consequently, it's no surprise that among regulated providers, Austin Energy has the largest green power program

MWh/year, 2003



Source: U.S. Department of Energy, National Renewable Energy Laboratory. As of December 2003.

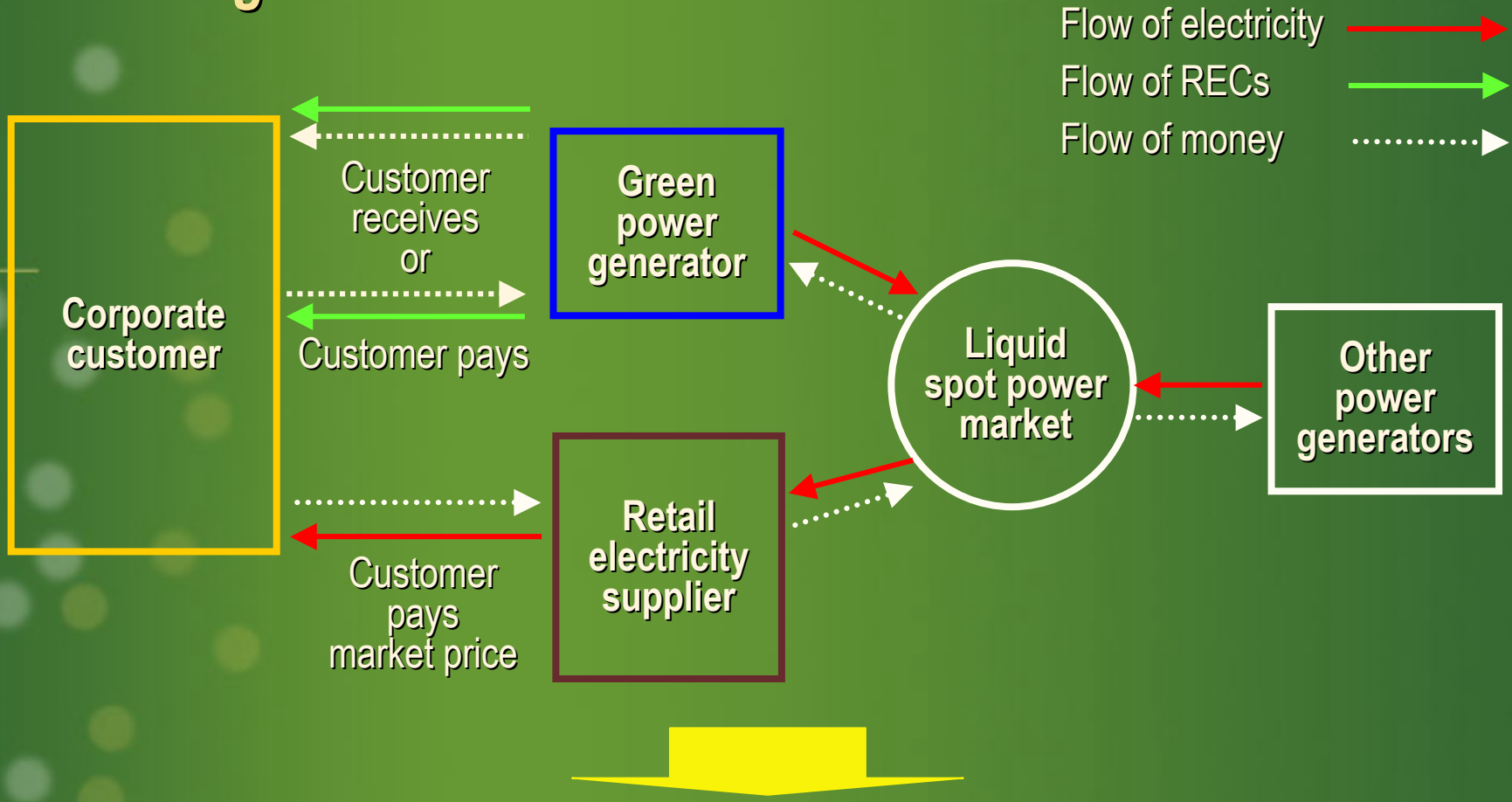
Where would long-term fixed-price green power be attractive?



Markets where . . .

- **Rates fluctuate & volatility passed on to customers**
- **Natural gas a key primary fuel**
- **Suppliers transitioning away from price caps**

What is a green contract for differences?



CFD with green power generator signed at…	& market price for power is…	$ customer receives from (pays to) green power generator is…	& net cost to customer is:
$40/MWh	$55/MWh	$15/MWh	$40/MWh
$40/MWh	$30MWh	($10/MWh)	$40/MWh

Why green CFDs?

Value proposition

- PR, environmental goals . . .
- . . . plus hedge against electricity rate fluctuations

Which markets?

- Deregulated markets

Case example

- VisionQuest + City of Calgary (26,000 MWh/year)
- VisionQuest + Province of Alberta (105,000 MWh/year)

Recent activity

- NYSERDA working to develop wind-based CFD in NY
- WRI & NYSERDA issued joint RFI

More information about next generation products can be found in the next issue of WRI's "Corporate Guide to Green Power Markets"

- November, 2004
- 3 products
- Case studies
- US, Canadian, & Mexican markets

Thank you!

Contacts

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Photo courtesy of Corey Babcock & the National Renewable Energy Laboratory